



Search

surface transportat

Go

[Return to Results](#) | [Remove Frame](#)


Surface Transportation Policy Project

[Stats for Your State](#) | [Transportation Decoders](#) | [Issue Areas](#) | [In TI](#)
[Transfer Bulletin](#) | [Reports](#) | [Grassroots Coalition](#) | [Ab](#)

3/20/2000

Driven to Spend: Chapter Three: Sprawl Makes Transportation Expensive

Search

[STTP Reports](#)
["Decoding" Briefs](#)
[Transfer Past Issues](#)
[Progress Past Issues](#)
[Health and Safety](#)
[Economic Prosperity](#)
[Equity and Livability](#)
[Environment](#)
[Visit Tea3.org](#)
[Join Our Coalition](#)
[Action Center](#)
[Donate](#)

What accounts for the marked differences in transportation expenditures in different places? Our analysis indicates that the biggest effect comes from the spread-out development pattern commonly called sprawl.

The relationship between sprawl and expenditures on transportation can be seen both through the statistical analysis described in the following paragraphs and by a cursory look at the country's most expensive metropolitan areas (see Table 2). Nearly all the places at the top of the list are sprawling metropolitan areas that offer their residents relatively few transportation choices. Houston, Atlanta and Phoenix in particular have been marked in recent decades by extraordinary growth in both their physical boundaries and the extent of their highway networks.

In contrast, the places where households spend the smallest portion of their budgets on transportation are more likely to have a compact form and a good public transportation system. Chicago and Boston fit this profile, as do neighborhoods such as Westwood and Belmont Shores in the Los Angeles metro area, and North Beach and Rockridge in the San Francisco metro area. We could expect similar savings in similar neighborhoods across the country, from Silver Spring, Maryland to Montclair, New Jersey.

This intuitive picture is borne out by a statistical analysis comparing household transportation expenditure data to a number of geographic and demographic factors. For this analysis, we compared data from the Consumer Expenditure Survey to socio-economic, land use, and transportation data gathered by our researchers.¹ Some factors, such as household size, were found to have no significant effect on household expenditures. Others, especially the land use pattern that constitutes sprawl, were found to have a powerful effect.

What Is Sprawl?

To determine the exact relationship between sprawl and personal costs, we compiled several measures of sprawl developed by STTP and affiliated researchers². This composite measure summarizes the efficiency of land use in metropolitan areas in terms of several different indicators:

Mix of Land Uses. Sprawling metro areas tend to segregate housing, workplaces and stores from one another in single-use districts. Jobs are far away from homes, and residential neighborhoods contain housing but no jobs or stores.

surface transportation policy project



The transportation system should provide for the efficient and reliable delivery and distribution of goods and services to all markets, serve employer needs for recruitment and retention of a high-quality workforce, and be redundant, resilient, reliable and resistant to service and system disruptions. In addition, transportation investments should support local and regional economic objectives and recognize efficient activity centers as the drivers of economic prosperity and sustainable growth.

–New Transportation Charter

Businesses are primary taxpayers in most communities. They bear the costs of inefficient infrastructure systems – and their prosperity is at stake when merchandise is not delivered on time, and when workers are delayed and stressed by commuting requirements. Livable communities attract highly qualified, mobile workers – and the converse is also true: unlivable, difficult commutes keep good workers away.

Unnecessary Costs
Annual costs of motor vehicle crashes:
\$230.6 billion - includes \$61 billion in lost workplace productivity

Annual cost of congestion in major urban areas:
\$78 billion

Inefficiencies dominate the transportation system because it is not planned or improved as a system. Intermodal connections must be made seamless – for people as well as freight. Better management is the key. Business leaders have the experience and knowledge of such systems to give invaluable input into the decision-making process – locally, at the state level, and at the federal level of transportation planning.

Worker Productivity Lowered by Bad Commutes

Each year, businesses across the country are paying tens of billions of dollars extra in absenteeism, excess parking, medical care, employee benefits, turnover, and lowered productivity expense. Employees who have no choice but to battle their way through congestion every day are less productive and more likely to change jobs. Employers are forced to increase their site costs through land for parking that many employees would just as soon not use – parking “cash-out” programs (cash instead of parking) consistently produce a 10-12% reduction in parking needs where alternative modes are available.

The productivity costs of bad commutes can be substantial. In 1995, the most recent data available on total drive time, the average American spent 443 hours behind the wheel of a car, or 55 eight-hour workdays. In a study of 68 cities, the Texas Transportation Institute (TTI) estimated that the total congestion “bill” for the areas studied in 1999 came to \$78 billion, which was the value of 4.5 billion hours of delay and 6.8 billion gallons of excess fuel consumed.

Employees also recognize the toll that excessive commutes will take on them. Businesses that are not served by transit and close-by development find it significantly harder to recruit workers. Many highly skilled employees are also increasingly seeking workplaces located in areas with a high quality of life, which they associate with activity clusters, such as downtowns or “village centers,” transportation options, and affordable housing close to the workplace. Employees want a supermarket of transportation and lifestyle choices, and businesses benefit when these are provided by the public sector.

Shifting Investment Raises Costs

Businesses located in existing areas are increasingly suffering from rough roads, high traffic, and lack of accessibility to shippers, retailers, and customers. A disproportionate amount of public money is being spent to create new infrastructure on the fringe of the urbanized area, benefiting businesses who move, but not those who stay in place. The companies staying in place instead are surrounded by aging infrastructure which receives a decreasing share of limited maintenance funds as new roadway and exit ramps enter their own maintenance cycle.

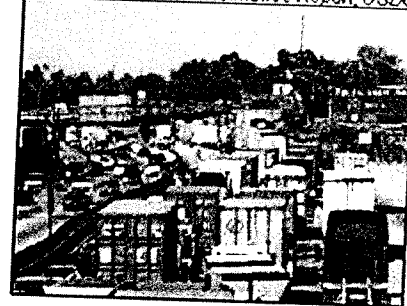
Businesses also depend on livable communities to maintain a customer base for service and retail. They are doubly hurt by disinvestment in metropolitan areas – where 80% of the US population live, and 85% of the country's economic activity takes place – first, in their own operations, and second in their ability to move products and services at the other end.

Just-In-Time Methods Require Reliability

Cutting Edge Factories, Inventory On Hand

1990 – 15 Minutes of Inventory
1997 – 10 Minutes of Inventory

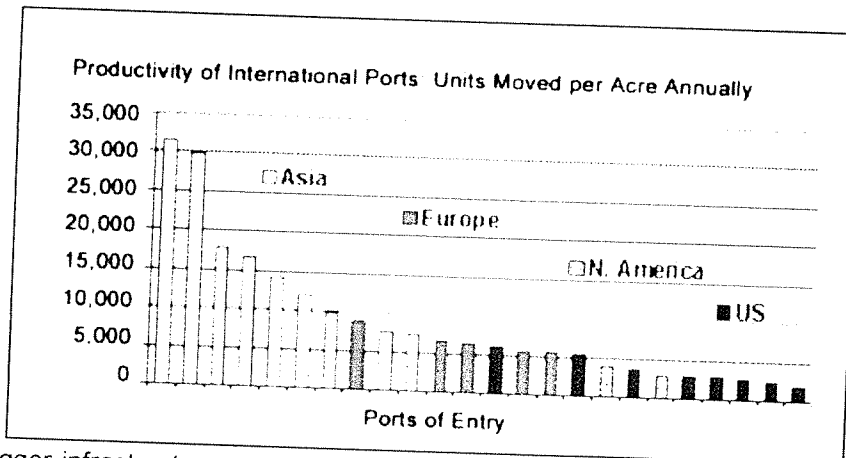
1997 Condition and Performance Report, USDOT



50% of delay is caused by unpredictable events

Goods Delivery Hampered by Old Business Model

Many shippers and other businesses are currently caught in a captive market for freight movement. Intermodal needs are increasing, but businesses in many locations have no choice in moving their freight because of a lack of access to cost-effective modes such as rail and intermodal services. Improvements to the complex intermodal system that would be required to meet these needs are done piecemeal and are hampered by current subsidies favoring the status quo.



Working under a 'just-in-time' model, shippers and freight providers need reliability as much or more than speed of delivery. Everyday congestion as well as unpredictable accidents on the roadway jeopardize business success. The productivity of freight infrastructure in the U.S. is still low when compared to other countries around the world. U.S. freight problem-solvers prefer to "work hard," with a construction solution – more infrastructure, better utilization of existing infrastructure, and a smarter investment.

The State of Our Nation's Roads

Half of All Major Roads Are in Less Than Good Condition

Reform of federal transportation financing has led to an improvement in the condition of the nation's roadways, though the nation's street and road networks could have improved even more had a stronger emphasis been placed on repair and rehabilitation. In the last ten years of spending under ISTEA and TEA-21, the percent of major roadways (Interstates, Freeways, Expressways, Principal Arterials, and Minor Arterials in rural areas) in good or better condition grew from about 30 percent in 1994* to about 50 percent in 2001. Interstate highways saw the largest improvement, due mostly to a targeted Interstate Maintenance funding program in the federal transportation law. Nationwide, 33.5 percent of federal highway funds (excluding planning and engineering funding) has been spent on repairing and rehabilitating roads, while 25.2 percent has been spent on the expansion of existing roads, or construction of new roads.

However, despite recent improvements, fully 50 percent of roadway miles remain in less than

good condition. And in urban and suburban areas, where most of the population lives and most of the driving occurs, 68.4 percent of roadway miles are in poor, mediocre, or fair

Nearly 70% of the nation's urban and suburban roads are in less than good condition.

condition. This figure is extremely high, especially in light of the more than 40 percent statutory increase in federal funding under TEA-21. While some states have embraced the concept of Fix It First, others have not, instead favoring new

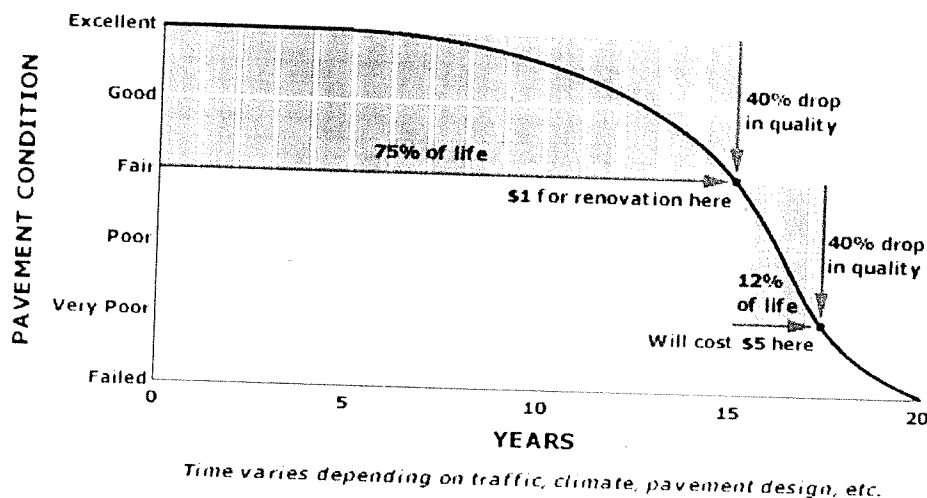
highway construction over maintenance and repair of existing streets and roads.

Road Conditions Still Poor

As noted above, half of the nation's roadways, and nearly 70 percent of urban roadways, are in poor, mediocre, or fair condition as of 2001, the most recent year for which data is available. As bad as that sounds, it's nothing compared to what drivers in some states must contend with. The state of Hawaii, with 89.7 percent of its roads in less than good condition, has the worst roads in the nation as of 2001. Missouri, where 87.5 percent of all roads are in poor, mediocre, or fair condition, is a close second. In Michigan, nearly 90 percent of urban roads are classified as in less than good condition. And in Massachusetts, more than 88 percent of the state's rural roads were found to be in poor, mediocre, or fair condition.

Despite a fairly dismal starting point, road conditions in a handful of states actually worsened from 1994 to 2001. In the state of Utah, for example, the portion of road miles in poor, mediocre, or fair condition grew by almost 121 percent. In that 8-year period from 1994 to 2001, Californians saw a 25 percent rise in the portion of roadway miles in less than good condition.

Deferring Maintenance Costs More in the Long Term



Pavement deterioration accelerates rapidly towards then end of a roads useful life. Because of this, deferred repair can cost up to 5 times as much as early repair. (Source: Metropolitan Transportation Commission. *The Pothole Report: An Update on Bay Area Pavement Conditions*. March 2000).

* 1994 was used as a baseline because it was the earliest year for which complete data was available for all but 8 states.

States Underspend on Road Repair

When TEA-21 was signed into law in 1998, it increased federal highway funds by more than 40 percent. Nationwide, that increase resulted in a corresponding increase in spending on road repair and rehabilitation, so that the share of federal funds obligated on repair and rehabilitation projects held steady at about 33 to 34 percent of federal highway funds (excluding planning and engineering). A closer examination of state-by-state spending patterns, however, reveals tremendous variability among states.

While many states have embraced the concept of Fix It First, some have not, often at the expense of blown tires and damaged shocks. Virginia, for example, spent only 13.4 percent of its federal highway funds (excluding planning and engineering) on road repair and rehabilitation during the ten year period since 1992. This low spending is reflected in the condition of the state's roads. As of 2001, nearly two-thirds of Virginia's roadway miles were found to be in poor, mediocre, or fair condition. Yet despite the obvious need to repair existing roads, the Virginia Department of Transportation instead dedicated almost 41 percent of the state's available federal funding to the construction of new roadway capacity.

Pothole Index

In order to evaluate whether states have made Fix It First a priority, STPP combined the two measures discussed above – roadway conditions and spending on repair and rehabilitation – into a single metric. That metric, the average annual amount spent on road repair and rehabilitation per mile of roadway in poor, mediocre, or fair condition, provides a rough comparison of the states' performance.

The State of Virginia, spending an annual average of just \$11,289 per mile of roadway in less than good condition, ranks last among the states.* Mississippi comes in a close second to last at less than \$15,000 yearly per mile of roadway in poor, mediocre, or fair condition. With more than 81 percent of its roads classified as in poor, mediocre, or fair condition as of 2001, the state of Oregon is right behind Mississippi, also spending an average of less than \$15,000 annually per mile of roadway in poor, mediocre, or fair condition.

Conclusion

While road conditions have improved since the passage of ISTEA and TEA-21. Interstate highway and bridge conditions in particular improved as a result of targeted funding programs in ISTEA and TEA-21. Yet many states have failed to embrace the concept of Fix It First. TEA-21 provided an influx of new federal highway funding to the states, increasing the total funds available by more than 40 percent. Unfortunately, many states used the new funding to finance new highway construction programs at the expense of repairing existing roadways. As a result, fully half of all roadway miles and nearly 70 percent of urban roadway miles are classified as in less than good condition. When TEA-21 is reauthorized in the upcoming year, legislators should consider new incentives and policies to encourage states to make road repair and rehabilitation a priority. Every state should adopt a Fix It First policy to ensure that the massive investment in the nation's roadways is not wasted. Further, states should be required to distribute funds fairly among urban and suburban, and rural areas. This would help ensure that the roads in our nation's cities, towns, and suburbs – where most of the country lives and drives – are kept in good condition.

Sources:

Federal Highway Administration. *Highway Statistics Series 1997 and 2001*. Table HM-64.
STPP Analysis of FHWA's Fiscal Management Information System (FMIS).

* Out of the 48 states which provided condition data on at least 75 percent of their roadway miles.

For further information, see:

<http://www.transact.org>

<http://www.tea3.org>

<http://www.antc.net>

Table 1. Road Conditions and Spending of Federal Funds on Repair by State, Ranked by Average Yearly Spending on Repair per Mile of Roadway Not in Good Condition

Rank		Percent of Roads Not in Good Condition (1994)	Percent of Roads Not in Good Condition (2001)	Percent of Urban and Suburban Roads Not in Good Condition (2001)	Share of Funds to Road Repair (1992-2001)	Average Yearly Spending on Road Repair (millions)	Average Yearly Spending on Repair per Mile of Roadway Not in Good Condition
1	Virginia	84.3%	66.4%	76.7%	13.4%	\$55.6	\$11,289
2	Mississippi	73.3%	60.7%	71.7%	28.0%	\$64.5	\$14,858
3	Oregon	71.0%	81.2%	88.4%	34.3%	\$76.1	\$14,911
4	Nebraska	72.6%	46.7%	88.1%	39.2%	\$57.0	\$15,745
5	Arkansas	N/A*	75.9%	88.2%	30.4%	\$79.5	\$16,642
6	Colorado	64.8%	54.0%	72.6%	42.4%	\$75.0	\$17,498
7	North Carolina	79.0%	61.5%	65.7%	20.0%	\$90.4	\$18,607
8	South Carolina	50.4%	42.0%	60.0%	21.6%	\$55.9	\$19,662
9	Massachusetts	N/A*	87.4%	86.8%	12.4%	\$57.6	\$19,992
10	Missouri	76.5%	87.5%	91.9%	35.8%	\$155.0	\$20,218
11	South Dakota	78.8%	72.1%	70.9%	73.5%	\$99.4	\$21,233
12	Tennessee	58.8%	31.9%	38.3%	15.9%	\$60.1	\$24,427
13	California	65.5%	81.9%	91.9%	26.4%	\$450.1	\$26,901
14	Utah	26.6%	58.8%	60.5%	43.0%	\$59.7	\$27,994
15	Iowa	70.9%	53.4%	71.8%	55.6%	\$137.2	\$28,950
16	Texas	99.1%	55.9%	77.3%	33.2%	\$421.3	\$29,705
17	West Virginia	N/A*	55.6%	51.1%	22.5%	\$57.2	\$30,466
18	Michigan	57.6%	65.4%	89.7%	39.8%	\$215.4	\$31,943
19	Kentucky	68.8%	43.0%	52.5%	26.1%	\$76.0	\$34,048
20	Washington	94.9%	46.9%	52.8%	26.8%	\$90.0	\$35,562
21	North Dakota	84.3%	43.5%	65.5%	79.4%	\$103.6	\$38,579
22	Vermont	61.0%	51.0%	65.0%	42.6%	\$29.4	\$38,776
23	Illinois	82.4%	56.4%	66.6%	41.2%	\$270.3	\$38,917
24	Wisconsin	59.1%	42.5%	76.4%	56.7%	\$181.2	\$40,276
25	Connecticut	80.4%	79.5%	80.6%	22.3%	\$61.8	\$40,815
26	Pennsylvania	N/A*	64.9%	76.2%	40.7%	\$322.7	\$41,343
27	New York	69.1%	49.6%	74.6%	26.3%	\$221.9	\$41,811
28	New Jersey	N/A*	74.0%	82.3%	23.7%	\$95.4	\$44,082
29	Maine	49.8%	40.6%	56.4%	43.9%	\$44.6	\$45,915
30	Idaho	93.1%	33.9%	62.2%	48.8%	\$60.0	\$46,149
31	Louisiana	69.9%	61.1%	75.9%	46.7%	\$128.7	\$46,584
32	Minnesota	93.1%	29.5%	44.8%	52.6%	\$160.7	\$46,676
33	New Mexico	68.2%	35.3%	69.0%	49.1%	\$93.7	\$51,094
34	Kansas	55.7%	24.1%	66.3%	54.6%	\$109.5	\$51,489
35	Montana	81.5%	26.6%	69.0%	62.6%	\$104.4	\$56,605
36	Hawaii	N/A*	89.7%	89.3%	25.5%	\$33.6	\$57,830
37	Rhode Island	91.3%	82.9%	85.5%	34.5%	\$32.1	\$61,536
38	Maryland	77.0%	45.4%	65.4%	25.2%	\$87.5	\$63,017
39	Alabama	30.7%	24.4%	26.3%	34.3%	\$124.5	\$66,213
40	Indiana	63.3%	37.2%	59.4%	38.0%	\$156.8	\$66,354
41	New Hampshire	40.5%	36.7%	40.4%	43.2%	\$35.5	\$69,926
42	Delaware	76.2%	55.1%	57.4%	33.2%	\$23.4	\$84,612
43	Ohio	31.4%	30.3%	52.7%	39.6%	\$241.7	\$88,385
44	Arizona	39.6%	27.5%	36.2%	39.6%	\$109.2	\$102,376
45	Florida	68.4%	19.3%	27.7%	30.6%	\$220.4	\$104,507
46	Wyoming	94.4%	15.4%	37.5%	71.6%	\$82.4	\$120,988
47	Nevada	43.3%	8.0%	40.0%	28.3%	\$33.2	\$141,420
48	Georgia	N/A*	2.8%	9.8%	18.2%	\$102.5	\$321,394
	Alaska	N/A*	N/A*	N/A*	45.8%	\$87.0	N/A*
	Oklahoma	82.6%	N/A*	N/A*	33.7%	\$90.3	N/A*
United States		70.1%	49.9%	68.4%	33.5%	\$5,904.6	\$35,128

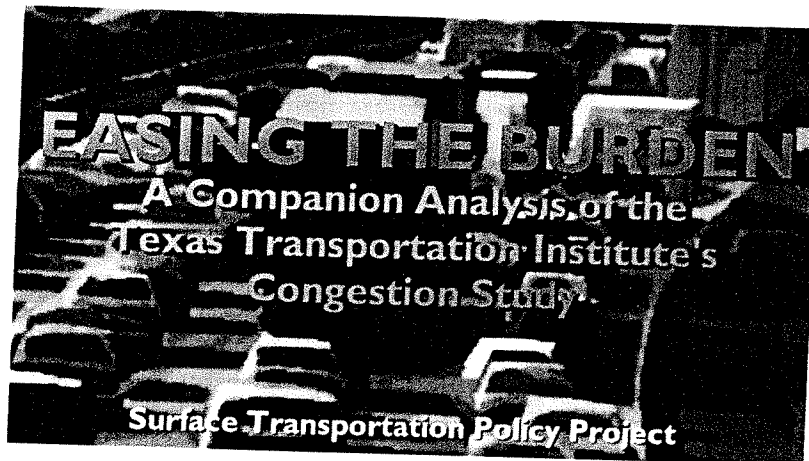
*State reported on less than 75 percent of roadway miles.

Ten Years of Federal Dollars at Work in Michigan, 1992-2001

Traffic Safety	National Rank in Least Spending Per Traffic Fatality: 36					
	Funds Available					
	STP Safety Program Apportionments 1992-2001 (millions)	\$148.0	Unobligated balance* (millions)	\$57.6	Obligation Rate	69%
	Outcomes					
Bridge Conditions	Average annual traffic deaths, 2000-2001	1,355	Estimated yearly cost of Traffic Fatalities (millions)	\$3,658.5	Average Yearly Safety Spending Per Traffic Fatality	\$77,523.2
	National Rank in Lowest Percent of Structurally Deficient Bridges: 42					
	Funds Available					
	Apportionments for Bridge Repair, 1992-2001 (millions)	\$841.9	Unobligated Balance* (millions)	\$211.0	Obligation Rate	75%
Air Quality	Outcomes					
	Percent Change in Number of Structurally Deficient Bridges, 1992 to 2001	-5%	Percent of Structurally Deficient Bridges on Federal-Aid System (2001)	17%	Percent of Structurally Deficient Local Bridges (2001)	22%
	Total Number of Structurally Deficient Bridges (2001)					2,012
	National Rank in Lowest Obligation Rate for CMAQ Program: 25					
Road Conditions	Funds Available					
	Total CMAQ Apportionments, 1992-2001 (millions)	\$304.4	Unobligated Balance* (millions)	\$59.6	Obligation Rate	80%
	Outcomes					
	Person Days of Unhealthy Air Quality**, Avg. 1992-1993 (millions)	32.6	Person Days of Unhealthy Air Quality**, Avg. 2000-2001 (millions)	50.0	Percent Change	53%
Road Conditions	National Rank in Least Average Yearly Spending on Repair per Mile of Roadway Not in Good Condition: 18					
	Spending					
	Average Yearly Spending on Road Repair, 1992-2001 (millions)	\$215.4	Average Yearly Spending on New Road Capacity (millions)	\$114.9	Share of Funds to Road Repair	40%
	Outcomes					
Road Conditions	Average Yearly Spending on Repair Per Mile of Roadway Not in Good Condition, 1992-2001 (millions)	\$31,942.7	Percent of Roads Not in Good Condition (2001)	65%	Percent of Urban & Suburban Roads Not in Good Condition (2001)	90%

* Unobligated balance as of end of FY 2001, as reported by FHWA. May not equal apportionments less obligations due to transfers out of the STP Safety program.

** Where Person Days of Unhealthy Air is calculated by multiplying the number of people affected by the number of days in which the Air Quality Index (AQI) exceeds 100 during a year, and averaging that value over 2 years.



Congestion and Transportation Choice in Detroit, MI.

**Detroit, MI has a Congestion Burden Index of 1.22; CBI.
Rank:3**

Stuck in Traffic

Number of Workers Driving	1,634,863
Percent of Workforce Driving	93.2%
Number of Workers Not Driving	118,997
Percent of Workforce Not Driving	6.8%

111,212 more cars would be on the road in Detroit if every commuter had a car.

Transportation Choice

1999 Hourly Miles of Transit Service per 1000 Persons:	0.96
1999 Lane Miles per 1000 Persons:	1.53

Detroit's transit-to-lane-mile ratio is 0.63.

How Commuters Get to Work

Took Transit:	3.3%
Walked:	1.9%
Bicycled:	0.1%

Worked at Home:

1.5%

Drove Alone, Carpooled, or Rode a Motorcycle:

93.2%

Detroit's Roadway Extent

Road Building Group:

High

Lane miles added since 1990:

6.5%

Change in Population since 1990

0.5%

Most Recent TTI Congestion Indicators (rank)

1999 Travel Rate Index:

1.31 (15)

1999 Roadway Congestion Index:

1.20 (13)

1999 Annual Delay per Capita:

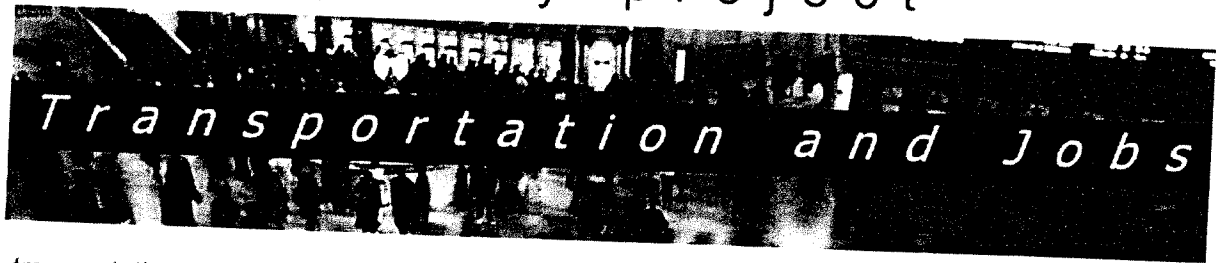
41 hours (16)

1999 Percent Congested Daily Travel

35% (13)

All Statistics by Urbanized Area. Data for this fact sheet from TTI, U.S. Census Bureau, and the Federal Transit Administration.

surface transportation policy project



The transportation system should be socially equitable and strengthen civil rights; enabling all people to gain access to good jobs, education and training, and needed services. The transportation system should allow every American to participate fully in society whether or not they own a car and regardless of age, ability, ethnicity, or income.

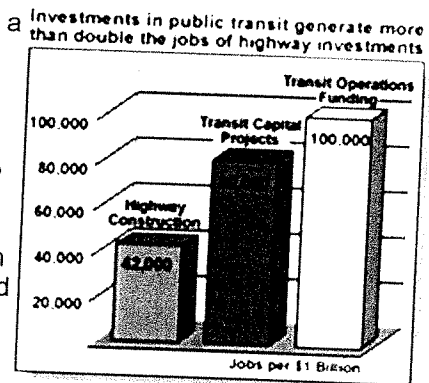
– New Transportation Charter

Transportation policy has a strong, positive relationship with job creation and access. The transportation system should support job creation and grant all people access to good jobs. Unlike past transportation decisions that have focused on short-term solutions and have ignored large sections of the population, modern transportation investments must expand opportunities and improve quality of life.

Impact of Public Transportation Projects on Job Creation

In recent years, proponents of increased investment in new highway capacity have used job-creation as a rallying cry for their cause, saying that money spent on these new roads will lead to a surge in new jobs. While transportation investment should not be seen as primarily a jobs program, economic studies indicate that transit capital investments and operations funding are even better sources of long-term job creation.

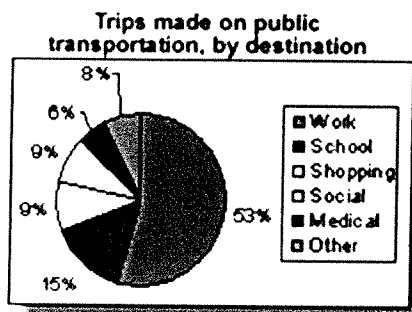
According to a recent study by Cambridge Systematics, 314 jobs and a \$30 million gain in sales for businesses are created for each \$10 million invested in transit capital funding, and over 570 jobs are created for each \$10 million in the short run. While new highway construction does lead to an increase in employment, these jobs are mostly for non-local workers: road engineers and other specialists who come in to an area for a specific job and then leave when it has been completed. On the other hand, transit investments create a wealth of employment opportunities in the short and the long run. Transit system construction leads to an impressive level of short-term job creation, and once the systems are finished, a long-term source of high-quality jobs. Of the 350,000 people directly employed by public transportation systems, more than 50 percent are operators or conductors. In addition, 10,000 to 20,000 professionals work under contract to public transportation systems or are employed by companies and government offices that support these systems. Thousands of others are employed in related services (i.e. engineering, manufacturing, construction, retail, etc.).



With sustained local job and transit system creation comes a matching increase in tax and sales revenue for local communities. A recent report by the American Public Transit Association (APTA) found that every dollar taxpayers invest in public transportation generates \$6 or more in economic returns. Business leaders now realize that metropolitan regions cannot operate effectively, or attract new business investment, without good public transit. Of the 50 largest metropolitan areas in the United States, 48 are building or expanding their transit systems, or have plans to do so. A recent survey by Jones Lang LaSalle in Property Futures found that 77 percent of New Economy companies rated access to mass transit as an extremely important factor in selecting corporate locations.

Transportation and Job Access

While two-thirds of new jobs are located in the suburbs, more than 62% of all job openings are replacement jobs, not new jobs. Most of these replacement jobs are in core built-up areas that are often not well-served by transit. Improved transit operational service in these areas can connect more workers to jobs than new investments in the suburbs. Moreover, transit-oriented development (TOD) in areas with existing transit service can turn subway stops and commuter rail stations into hubs for mixed-use development where workers can walk (or connect by a short bus ride) to jobs, housing and services.



Recent transportation policies have tended to keep low-income people far from available jobs. According to the Federal Transit Administration, three-quarters of welfare recipients live in central cities or rural areas not well served by transit. While "workforce accessibility" is of increasing importance to employers in site location to improve workforce recruitment, welfare recipients are usually not located near such sites. As a result, low-income workers spend up to 36% of their household budget on transportation services, mostly to gain access to job sites.

Public transportation systems play a key role in moving former welfare recipients into the workforce as permanent wage earners. A 1999 APTA survey revealed that an estimated 94 percent of welfare recipients attempting to move into the workforce rely on public transportation.

In order to ensure the success of federal and state welfare-to-work programs, there must be better coordination between state and local transportation departments with housing, welfare and employment agencies. Incentives for such coordination include: transit-oriented development featuring housing, jobs, childcare, and job training centers accessible to reliable public transportation.

- Under the current \$75 million annual federal Job Access and Reverse Commute (JARC) initiative, public transportation systems around the nation work with state and local agencies to identify and assess mobility needs and to improve employment accessibility. These new and expanded services will provide access to jobs for 8 million households without a car.

- In Chattanooga, Tennessee, GIS mapping of welfare recipients, job locations and day care centers helps the transit agency develop transit routes that serve low-income households and provide access to jobs

- Co-location of affordable housing with affordable transit can improve job access to low-income families. Under a Housing Incentive Program (HIP) adopted by several counties in California, local jurisdictions are provided bonus transportation dollars in return for encouraging developers to locate affordable housing within a half-mile of transit stops.

Job access, even more than job creation, is a central transportation function. Compact cities with good transit services, as well as excellent para-transit services in rural areas, can significantly improve the jobs-housing balance and reduce the cost of job access, especially to low-income families. The equitable distribution of transportation services to provide job access to all Americans must be a central goal of transportation policy.